Remarks

Claims 1-5, 10, 11, 13-20, 25, 26, and 28-32 were pending in the subject application. By this Amendment, claims 1, 5, 17, and 20 have been amended, claims 6, 21, and 29-32 have been canceled, and new claims 35-40 have been added. No new matter has been introduced. Support for the amendments and new claims can be found throughout the original specification and claims (see, for example, page 7, lines 1-4; page 9, lines 10-15; Tables 1 and 3; and the Examples). Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 1-5, 10, 11, 13-20, 25, 26, 28, and 35-40 are currently before the Examiner.

The amendments to the claims have been made in an effort to lend greater clarity to the claimed subject matter and to expedite prosecution. These amendments should not be taken to indicate the applicants' agreement with, or acquiescence to, the rejections of record. Favorable consideration of the claims now presented, in view of the remarks and amendments set forth herein, is earnestly solicited.

Claims 1-5, 13-15, 17-20, 25, 26, and 29-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gillespie *et al.* (U.S. Patent No. 5,783,503) in view of Tortora (*Understanding Textiles*). The applicants respectfully request reconsideration.

By this Amendment, claim 1 has been amended to clarify that "without addition of the at least one antistatic agent to the melt blend, a static level measured at about one half inch below the outlet of the slot attenuation device is greater than 2 kilovolt per inch or less than -2 kilovolt per inch." That is, the antistatic agent is added to the melt blend in an amount sufficient such that the static level measured at about one half inch below the outlet of a slot attenuation device is reduced from an absolute value of greater than 2 kilovolt per inch to between -2 and 2 kilovolt per inch. Claim 17 has been amended to include a similar recitation. Also, new independent claims 35 and 37 convey the same limitation that the antistatic agent is added to the melt blend such that the static level is reduced from greater than 2 (or less than -2) kilovolt per inch to a value between -2 and 2 kilovolt per inch.

In Gillespie, on the other hand, there is no disclosure of adding an antistatic agent, let alone in an amount sufficient to reduce a static level at the attenuation device outlet as in the

claimed invention. The Action states that it would have been obvious to use the antistatic metal or carbon of Tortora in the Gillespie fibers. However, as discussed by the applicant in the Amendments of April 24, 2008, August 4, 2008, May 26, 2009, and November 6, 2009, a very high amount of carbon black is required to see any appreciable antistatic effect. Also, as discussed in paragraph 1 of Mr. Ortega's previous Declaration filed October 12, 2007, it is well-known in the art that using carbon black in the melt stream of a polymer, especially in high proportions, would severely plug filters and packs. The amount of carbon black or metal that would be required to be present in the melt in order to be sufficient to reduce a static level as claimed would be so high that a skilled artisan would not have had a reasonable expectation of success in being able to complete the process (especially the extruding). Due to these factors, a skilled artisan would have found neither a reason to combine, nor an expectation of success in doing so, the metal or carbon black taught by Tortora synthetic fibers with the process of Gillespie.

The mere fact that the purported prior art could have been modified or applied in some manner to yield an applicant's invention does not make the modification or application obvious unless "there was an apparent reason to combine the known elements in the fashion claimed" by the applicant. *KSR International Co. v. Teleflex Inc.*, 550 U.S. 550 U.S. 398, 127 S. Ct. 1727, 82 U.S.P.Q.2d 1385 (2007). Also, an applicant's invention is not "proved obvious merely by demonstrating that each of its elements was, independently, known in the (purported) prior art." *Id.* As discussed above, a skilled artisan would not have had a reason to modify the teachings of Gillespie and Tortora to arrive at the claimed invention, including the addition of enough carbon black or metal to observe the quantitative static level claimed.

Moreover, claims 1 and 17 each recite that "the filaments of the web are bonded at a temperature of between 180 °C and about 250 °C." Gillespie, on the other hand, fails to disclose this step of bonding the filaments at a temperature in the claimed range. The Action at pages 3 and 14 discusses the temperatures at which components are extruded in Gillespie and then asserts that bonding must be done at these extrusion temperatures (which the Examiner states are within the claimed range) because "spunbonding is necessarily done by bonding the filaments while they are still molten." The Examiner refers to the first paragraph of page 330

of the Tortora reference for support of this position. However, in a spunbonding process, the filaments are not necessarily at the same temperature during bonding as they are when they are extruded. After the filaments are extruded, they are quenched (cooled), drawn, and laid on a web before being bonded. As discussed in the Declarations Under 37 C.F.R. 1.132 of Dr. Billie Collier and Mr. Albert Ortega, filed November 6, 2009, cooling, drawing, and depositing takes place between the extrusion and the bonding. Thus, a skilled artisan would readily understand that bonding does not necessarily take place at the same temperature as extrusion, and therefore, Gillespie's high extrusion temperatures are not necessarily used for bonding.

As discussed above, the combination of cited references fails to teach or suggest the invention as claimed. Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on Gillespie *et al.* in view of Tortora.

Claims 1-5, 10, 11, 13-20, 25, 26, and 28-32 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Gillespie *et al.* (U.S. Patent No. 5,783,503) in view of Tortora (*Understanding Textiles*), and in further view of either Warburton (U.S. Patent No. 4,081,383) or George (U.S. Patent No. 4,167,464).

The Action states that Gillespie teaches to incorporate into the polymer melt components to control electrical properties, citing column 5, lines 35-42. However, Gillespie is primarily concerned with producing splittable filaments (see, e.g., column 5, lines 38-39), and the only additives to control electrical properties contemplated by Gillespie are those that might increase static buildup at the outlet of an attenuation device. As Gillespie teaches at column 9, lines 53-63, "[a] triboelectric charge can be developed in the filaments to promote separation... [a] nylon component can develop such a static charge... (and) [a]n external electric field can be applied to the filaments... to augment the separation" (emphasis added). Thus, Gillespie teaches away from any additives that would lower the static level at the outlet of an attenuation device since that would inhibit separation of the filaments, in direct contrast to the goal of the Gillespie process.

The Action also asserts that it would have been obvious to use the copolymer composition of Warburton *et al.* in the extrusion of Gillespie in order to provide the product

with better anti-soiling properties and to control the anti-soiling treatment's polymer particle size. Warburton *et al.* disclose an aqueous dispersion (column 1, lines 45-47), including a polymeric material, as an anti-soiling treatment for carpets and carpet yarns. A skilled artisan would recognize that addition of water, such as with the aqueous dispersion of Warburton *et al.*, into an extruder would cause problems since it could lead to depolymerization of polymers typically used in melt blends. Also, a skilled artisan would not have been motivated to use any individual components of the aqueous dispersion of Warburton to attempt to impart anti-soiling properties to any fabric; rather the entire dispersion (including the water), would be used, as taught by Warburton.

Moreover, as discussed in the November 2009 Ortega Declaration, since the aqueous dispersion of Warburton is applied directly to carpets and/or carpet yarns, a skilled artisan would not have had a reasonable expectation of success that the addition of this dispersion to a melt blend (before extrusion, quenching, drawing, web formation, and bonding), would impart any anti-soiling properties to a spunbonded nonwoven fabric like it does when applied directly to a carpet or carpet yarn. Nor would a skilled artisan have expected any other advantageous properties of Warburton's aqueous dispersion (intended for direct application to carpets and/or carpet yarns), such as any possible reduction in static build-up (column 6, lines 34-37), to be imparted to a spunbonded nonwoven fabric, when added to a melt blend (before extrusion, quenching, drawing, web formation, and bonding). Any component added to a melt blend will be subjected to high temperatures, so it would not be expected that the same properties would be imparted as in the case when Warburton's aqueous dispersion is applied directly to a carpet and/or carpet yarn. It would only make sense to apply the aqueous dispersion of Warburton *et al.* to the finished fabric of Gillespie since then a skilled artisan could ensure that the Warburton dispersion would retain its properties (even though it's not clear if such properties would even be imparted to a spunbonded fabric). The applicant notes that claims 1 and 17 as amended require actually bonding the filaments at a temperature between 180 °C and 250 °C.

With respect to George, the Action asserts that it would have been obvious to include George's copolymer composition in the extrusion of Gillespie in order to provide the product with better absorption of water and other bodily fluids. However, the highest temperature any

of the compounds in George is subjected to is about 50 °C (column 7, lines 64-65). A skilled artisan would not have reasonably expected any advantageous properties of George's interpolymer (only subjected to low temperatures), including water absorbency, to be imparted to a spunbonded nonwoven fabric when added to a melt blend (before extrusion, quenching, drawing, web formation, and bonding). Any component added to a melt blend will be subjected to high temperatures (much higher than 50 °C), so it would not be expected that the same properties would be imparted after melting the interpolymer and mixing with several other components in a melt blend. It would only make sense to apply the film coating of George to the finished fabric of Gillespie since then a skilled artisan could ensure that the George compound would retain its properties (even though it's not clear if such properties would even be imparted to a spunbonded fabric). The applicant notes that claims 1, 17, and 35 require actually bonding the filaments at a temperature between 180 °C and 250 °C.

Furthermore, George discloses the preparation of water absorbent films and fibers by photopolymerizing various compounds. As discussed in the November 2009 Ortega Declaration, all of the films and fibers of George contain water (column 7, line 45 through column 8, line 10; Tables 1 and 2). A skilled artisan would recognize that addition of water into an extruder would cause problems since it could cause depolymerization of polymers typically used in melt blends. Additionally, a skilled artisan would not have been motivated to use any individual components of the George composition to attempt to impart water absorbency properties to any fabric; rather the entire composition (including the water) would be used, as taught by George.

As discussed above, a skilled artisan would not have had a reason to include, or a reasonable expectation of success in doing so, any of the substances taught by Warburton *et al.* or George in the melt blend of Gillespie. Even assuming for the sake of argument, that one of these substances was actually included in Gillespie's melt blend, absent the applicant's disclosure, there would have been no reason to include such a substance in an amount sufficient to give a reduction in the static level as claimed.

Accordingly, the applicants respectfully request reconsideration and withdrawal of the rejection under 35 U.S.C. §103(a) based on Gillespie *et al.* in view of Tortora and in further view of either Warburton or George.

In view of the foregoing remarks, the applicant believes that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

The applicant also invites the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephone interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,

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LCF/la

Attachments: Request for Continued Examination
Transmittal letter asserting small entity status

I hereby certify that this correspondence is being electronically transmitted to the United States Patent and Trademark Office on the date shown below:

June 17, 2010

Louis C. Frank, Patent Attorney

TRANSMITTAL LETTER
Patent Application
Docket No. CRX.106XC1

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner	:	Patrick Butler
Art Unit	:	1791
Applicant	:	Albert E. Ortega
Serial No.	:	10/662,492
Conf. No.	:	9209
Filed	:	September 15, 2003
For	:	Method of Reducing Static in a Spunbond Process

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

Sir:

The subject applicant meets the requirements for and is entitled to small entity status.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Respectfully submitted,

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